IN THE CLAIMS:

1-15 (Canceled)

16. (New) A method for manufacturing a structure of composite material, said method comprising the steps of

laminating a first set of superposed layers of resin-impregnated, uncured composite material by automatic tape layout (ATL) to adapt orientation of fibers of the composite material to achieve structural requirements of a precured element,

curing the laminated first set of superposed layers of resin-impregnated, uncured composite material to form the precured element,

laminating a second set of superposed layers of resin-impregnated, uncured composite material by automatic tape layout (ATL) to adapt orientation of fibers of the composite material to achieve structural requirements of an uncured element,

forming the uncured element by cutting the laminated second set of superposed layers of resin-impregnated, uncured composite material in a determined pattern,

hot forming said uncured element in two steps by applying heat and vacuum to obtain a preform having a J-shaped cross-section,

mounting said preform on a curing tool,

positioning said curing tool and said preform on said precured element,

joining the preform to the precured element with an uncured structural adhesive to form an assembly of the curing tool and the preform on the precured element,

covering said assembly with a vacuum bag,

performing an autoclave curing of said assembly to polymerize the resin in said uncured element and said adhesive to obtain a cured element of said J-shaped cross-section

bonded to said precured element, and

removing the curing tool to obtain a structure of composite material formed by said precured element and said cured element of J-shaped cross-section.

17. (New) The method as claimed in Claim 16 further comprising mounting a plurality of said preforms having J-shaped cross-sections on a respective curing tool and positioning said curing tools and said plurality of said preform on said precured element to form an assembly of the preform on the precured element by means of the curing tools.

18. (New) The method as claimed in Claim 16 wherein said second set of superposed layers of resin-impregnated, uncured composite material is formed as a flat laminate with a varying thickness in different areas.

19. (New) The method as claimed in Claim 16 wherein said uncured element is hot formed to obtain the preform of J-shaped cross-section so as to be easily mounted on said curing tool.

20. (New) The method as claimed in Claim 16 wherein the step of hot forming said uncured element is effected by a hot forming tool comprising aluminum having wood on a surface thereof to contact said resin-impregnated, uncured composite material in order to prevent heat transfer loss and loss of vacuum in the vacuum bag.

21. (New) The method as claimed in Claim 16 wherein said curing tool is formed with an Invar layer to prevent deformations due to a thermal expansion during the autoclave curing of said assembly.

22. (New) The method as claimed in Claim 16 wherein said autoclave curing of said assembly is effected at a pressure between 586 kPa and 896 kPa, at a temperature of up to 190°C depending on said composite material, and with a heating gradient of 0.5 to

2°C/min.

23. (New) The method as claimed in Claim 16 wherein said laminated second set of superposed layers of resin-impregnated, uncured composite material is cut in the pattern with a thickness of between 1mm and 6mm.

24. (New) The method as claimed in Claim 16 wherein said precured element is formed with a length of up to 7m and with a delta shape.

25. (New) The method as claimed in Claim 16 further comprising forming an edge of said vacuum bag in a numerical control machine prior to placing said vacuum bag on said assembly.

26. (New) The method as claimed in Claim 16 wherein the composite material comprises glass fiber, carbon fiber, aramid fiber, boron fiber, epoxy resin, thermoplastic resin or thermosetting resin.

27. (New) The method as claimed in Claim 16 further comprising performing a fine adjustment of said vacuum bag to said assembly by overturning said assembly to a vertical position.

28. (New) The method as claimed in Claim 16 wherein said curing tool has a rectangular trapezoidal profile to allow adjustments in the positioning of said preform.

29. (New) The method as claimed in Claim 16, wherein said preform of J-shaped cross-section is formed by the steps comprising:

placing two of the laminated said second set of superposed layers of resin-impregnated, uncured composite material on a respective forming means and bending the two laminates of the second set to form two L-shaped parts,

placing the L-shaped parts against one another to form a T-shape cross-section, and

bending an end of the T-shaped cross-section to form the J-shaped cross-section.

30. (New) The method as claimed in Claim 16 wherein said curing tool has a rectangular trapezoidal cross-section with an edge such that said edge is above a radius of a foot of said preform.

31. (New) The method as claimed in Claim 30 further comprising filling a central gap between feet of the two parts with a part of carbon fiber having a triangular cross-section.

32 (New) The method as claimed in Claim 31 further comprising attaching a carbon fiber end strip to each foot of the two parts and applying an uncured adhesive on the strip to assist in the bonding of the uncured element to said precured element.

33. (New) The method as claimed in Claim 30 wherein said edge is 3mm from a start of said radius of the foot of said preform.

34. (New) A method of forming an aircraft structure of composite material comprising the steps of

forming a skin of the aircraft structure by

laminating a first set of superposed layers of resin-impregnated, uncured composite material by automatic tape layout (ATL) to adapt orientation of fibers of the composite material to achieve structural requirements of the skin, and

curing the laminated first set of superposed layers of resin-impregnated, uncured composite material,

laminating a second set of superposed layers of resin-impregnated, uncured composite material by automatic tape layout (ATL) to adapt orientations of fibers of the composite material to achieve structural requirements of beams having J-shaped cross-sections,

bending the second set of superposed layers of resin-impregnated, uncured composite material to form the beams having J-shaped cross-sections.

securing the beams to the skin with an uncured structural adhesive to form an aircraft structure, and

curing said aircraft structure to polymerize the uncured adhesive and the uncured beams.

35. (New) A method for manufacturing a structure of composite material, said method comprising the steps of:

laminating a first set of superposed layers of resin-impregnated, uncured composite material by automatic tape layout (ATL) to adapt orientations of fibers of the composite material to achieve structural requirements of a precured element,

curing the laminated first set of superposed layers of resin-impregnated composite material to form the precured element,

laminating a second set of superposed layers of resin-impregnated, uncured composite material by automatic tape layout (ATL) to adapt orientations of fibers of the composite material to achieve structural requirements of an preform having a J-shaped cross-section,

cutting the thus laminated second set of superposed layers of resin-impregnated, uncured composite material in a determined pattern,

bending said laminated second set of superposed layers of resin-impregnated, uncured composite material to obtain the preform having a J-shaped cross-section,

mounting said preform on said precured element with an uncured structural adhesive to form an assembly of the preform on the precured element, and

curing said assembly to polymerize the resin in said uncured element and said adhesive to obtain a structure of composite material formed by said cured element of said J-shaped cross-section bonded to said precured element.